Jena SQUID System

JESSY

System parameters with a standard magnetometer SQUID (voltage swing 60µV) and cryogenic cable (length 1.0m):

small signal bandwidth	> 10MHz
slew rate (15...50kHz)	> 15MΦ_0/s

The unique Jena SQUID System **JESSY** combines our advanced SQUID sensors with Supracon´s high performance electronics and a specially developed control software. It is designed as a customer-friendly plug-in solution. **JESSY** is a compact and flexible system that can be easily extended from a single- to a multi-channel system.

JESSY consists of the following parts:

- SQUID Sensor (current sensor, magnetometer, gradiometer)
- SQUID Electronics unit(s)
- Power Supply unit
- Connecting cables
- EasySQUIDcontrol Software
- User Manual

SQUID Electronics

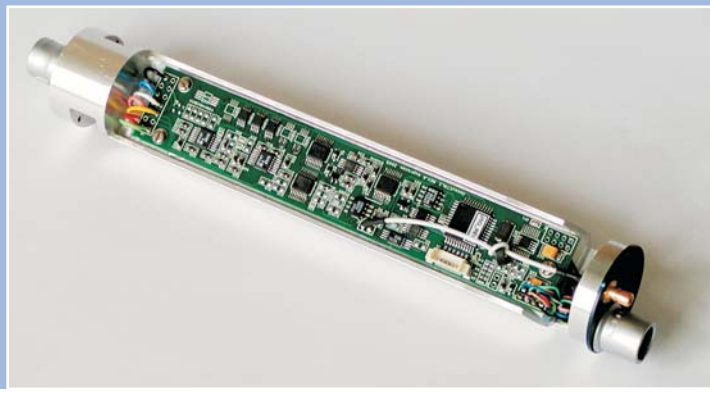
Supracon´s dc SQUID Electronics is an advanced directly coupled electronics with low noise and extremely high slew rate and bandwidth. It is fully controlled by IBM compatible PC through a standard serial RS 232 interface.

The SQUID Electronics unit controls the SQUID parameters and ensures linearization of the SQUID characteristics due to deep negative feedback to the SQUID. It contains all critical circuitry and should be placed as close to the SQUID as possible for the highest dynamic performance. The micro-processor based digital part of the electronics allows the adjustment of the SQUID´s working parameters either automatically or manually. One SQUID Electronics unit is necessary for every SQUID channel.

Optional versions of the system are for two-stage dc SQUID measurements or setups with dc SQUIDs as preamplifier of detector signals.

Main electronics parameters

white noise referred to input	< 0.33nV/Hz$^{1/2}$
1/f noise corner	< 0.1Hz
input voltage drift (0°C–65°C)	< 7nV/K
gain-bandwidth product	~ 6GHz
power consumption	~ 220mW



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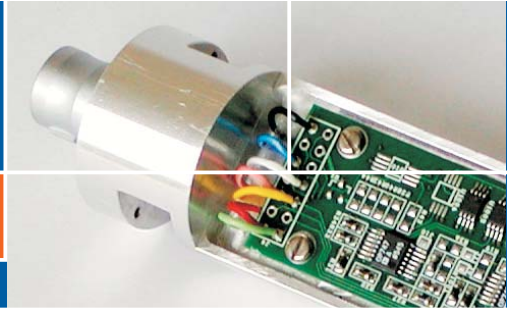
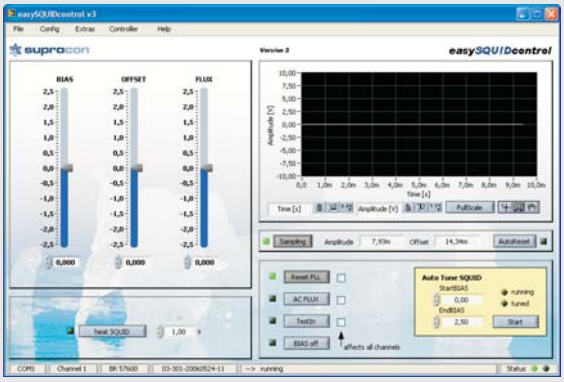
supracon®
SQUID and Microfabrication Technologies

Jena SQUID System

JESSY





Power Supply

The Power Supply unit produces stabilized voltages for the SQUID Electronics unit and ensures galvanic de-coupling of the digital signals from PC. The input voltage ranges from 220V/50Hz to 110V/60Hz or 9-18V dc. One standard Power Supply unit can drive up to 6 SQUID Electronics units.

EasySQUIDcontrol Software

The easySQUIDcontrol software has been developed for Microsoft® Windows® (WIN95, 98, 2K, ME, XP) operating systems. The automatic installation procedure and the graphic interface ensures easy and comfortable handling also for personnel without SQUID experience. The easySQUIDcontrol software works with all types of Supracon Electronics.

Connecting cable set

The set contains:

- Power Cable for the Power Supply unit
- Cable connecting Power Supply unit with SQUID Electronics unit (length till 50m)
- RS232 Cable connecting Power Supply unit with PC:
  1. Plastic fibre cable with up to 100m length for environments with strong RFI interferences
  2. RS 232 to USB cable adapter
- Cryo-Cable connecting SQUID Electronics unit with SQUID sensor (teflon isolated, screened twisted pairs with an overall diameter of 2.3mm)

Supracon designs, develops, and manufactures customized SQUID solutions. For any adaptations to your particular measurement requirements or other packaging options please do not hesitate to contact us.

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